



# Maryland Tripoli Report

Volume 2, Number 7



©B. Mantell 99

Cover: Bill Mantell's Level 3 rocket.

## Editor's Corner:

<http://www.erols.com/robertu>

email: [robertu@erols.com](mailto:robertu@erols.com)

Editor Bob Utley

Well, the end of another great flying year. We get to start this year with double zero's, it's gotta be up from there.

This is the time to renew your membership. Remember our membership is from January to January, so please take care of it soon.

Since it's a new year I have made some changes to the newsletter. A new Maryland flag, the old one needed cleaning anyhow.

I want to thank Randy Brust, Guy DeStefano for their contribution and Neil McGilvray for the always small, always truthful, launch reports.

If you have not noticed, in November 1999 HPR, on page 16 is the new Maryland Ad. Thank you Richard Harris for the logo.

## TREASURE REPORT:

*Treasurer Dave Weber*

November 11 the treasury had \$3202.00 in the bank.

December 23 the treasury had \$3400.00.

## MEETING SUMMARY:

November 11, 1999

This month's coming launch was expected to be a big one (which it was). The local area Hotels and Motels were added to the web page to give Dave Bullis a break on phone calls.

Starting with the new year Tripoli wants in writing from the landowner, approval to use the land for a launch. This was prompted by the new insurance to take effect January 1, 2000. The rest of the insurance stayed the same, so don't worry about it.

December 23, 1999

The big news was that Fred Wallace is now a TAP member, Yea Fred.

There was concern about Daves house since his Microwave was not Y2K compliant, it caught fire the other day.

Actual club business was: Have a flight waiver for each flyer that is a club member sign-off at time of membership renewal, that way they do not have fill one out at every launch they attend. Saves time and paperwork.

Fred Wallace was to head up the Legal Fund for our club, but was away on holiday. He did ask the club to pass on the \$1000.00 we voted on early this year to Tripoli. Once Fred gets back he would work on projects to collect more money for the Legal Fund. (If you have any ideas, please pass them on to Fred).

Dennis Sauer had all the pre-orders for the shirts and placed the order for 100 shirts, about 40 more than in the pre-order. The shirts will be in around January 20, 2000. Dennis will be at the next launch and meeting to fill the pre-orders.

Pat Barbers family sent Dave Bullis a letter for the club, thanking them for the flowers and support in their time of need.

## LAUNCH SUMMARY:

Wrap Up Of Maryland Tripoli 1999

You can count your blessings. We survived the Y2K bug and made it into another year, another century and another millennium. What better way to enter the year 2000 than with rockets. Back when most of us were kids we wondered what the world would be like in the year 2000. Would we even be alive? If so, would we be driving flying cars? Would we have robots for servants? Would we have a 20 hour work week. So much for predictions. What I do know is the members of Tripoli Rocketry Association are engaged in one of the most dynamic activities going. Dare I call it a sport?

We don't have those flying cars, but some of us are at least are flying the same material that a car is made out of and are probably coming close to the weight, if not the aerodynamic configuration. Not to mention any names, (Dave Bullis). But that is the beauty in what we do. Each individual

makes a statement when he or she constructs their rockets. When you look over the flight log you will notice more and more scratch built rockets at every launch. That in it self is the true spirit of ingenuity and experimentation. The thing that amazes me is that some of our home grown creations actually look like rockets. Sorry Dave Weber, keep trying though. I have no doubt that NASA will finally come to their senses and realize the aerodynamic advantages of using a giant Heineken bottle as an air frame. The real key is that by and large the designs work and are recovered successfully. There is nothing like the feeling of taking your scratch built rocket to the pad, watching it fly though the air and finally.....seeing the chute. All the second thoughts, the design changes, the "I wonder if I re-arrange this and reconfigure that" actually work in your favor.

There is a reason it does work in your favor. The reason is because each and everyone of us are getting better at this madness. With the improvement in construction and flying technique comes an increase in confidence. With the increase in confidence comes the need to push the envelope even further and that is the essence of rocketry. In our own limited way we are following in the footsteps of some great pioneers of rocketry. I wonder what we could do with Von Braun's budget? But he had to start somewhere and gain his confidence and ability. Imagine how he felt when he trashed a full scale V-2? Like those greats before us we keep moving forward and upward. Most of us are 3 rockets down the line on paper if not in construction. So a crash is only a minor set back.

In my three years of involvement in High Power Rocketry I have seen some amazing feats accomplished. Look around at our meager beginnings. Launching G's and H's in Tommy Higgs back yard. My first launch consisted of Bs and Cs, now I can't remember launching at least a K or bigger. No wonder I maxed out all my credit cards. I knew there was a correlation there, somewhere. The sad truth is that I am not alone. There are many that have been bitten by the same bug, plus all those whose temperature seems to rising at every launch. There is no doubt that they will be coming down with a terminal bout of AP Fever. Other wise know as the inexplicable need to

spend hundreds if not thousands of dollars and travel hundreds if not thousands of miles to watch a tube, a nose cone and some fins blast out of sight in mere seconds. Always knowing full well that you may never see it again. ( This is not a problem if it is some else's rocket.) The fever part comes in when you feel the need to do this with bigger and bigger rockets. Think of the money we would save if we limited ourselves to Estes Rockets. But then we wouldn't be pushing or tearing the envelope. The unconfined enthusiasm for rocketry is what makes it such a pleasure to come back launch after launch. That's why I keep coming back anyhow.

This year really flew by, sorry I couldn't resist, leaving us some memorable flights. The year brought us many successes. Too many Level One Certification and Level Two Certifications to list here. You know who you are and for your accomplishments you are to be congratulated. The coveted Level Three Certifications that were achieved by Fred Wallace, Bill Mantell, Lester Sherman, Norwood Truitt and Pat Barber. The year 2000 will have more Level Three's to come. Remember the fever is terminal. There was the 100 plus fights of Dave Weber's Tuber. A feat that will not be matched soon. The high altitude antics of Kevin Mitchell and the Jim Stanlick / Pat Barber Project BS. The look on the face of every Rocketeer when that chute finally opens. Those successes are in the thousands. As Joe May says "and that's how we do that"

The year brought us failures and frustrations also. Bob Utley keeps showing up for one. Once again I couldn't resist. Actually, Bob should be listed above in the success section. Bob has taken over the reins of the Web page that Sean McAndrew started some years ago. Since starting college Sean didn't have the time to keep up with the monthly demands of the piranha, that are our membership, to keep the Web page fully stocked with our favorite food we can munch on while surfing the Net at work. Yes you got it. Pictures of our rockets! Bob has done a fabulous job of turning the Maryland Tripoli Web Page into one of the most visited sites for rocket related activities. Not only has Bob made us a leader with his timely postings, but he also is the editor of the Maryland Tripoli Report. The MTR is

posted as one of the few E-Zines on The Rocketry Online Web Page and is visited thousands of times per month also. With out people like Bob doing these thankless jobs we would be wallowing in obscurity. Instead Maryland Tripoli is one of the premiere Rocket Clubs on the East Coast and in the country, what the hell, the world. As an indicator of the Club's prominence we are now blessed with a TAP Committee member of our own. Fred Wallace has been officially taken into the inner sanctum of Tripoli. Congratulations Fred. They couldn't have picked a better person for the job. ( By the way, what's the latest dirt?).

Back to the failures and frustrations. When I think of the F & F many images pop into my mind. Some of my own. God knows I have trashed my share of rockets. Lots of others have also trashed their rockets but how can we begin this section with out roasting our own Nelson Wallace. Nelson is one of the most intelligent members of our group when it comes to aeronautics and rocketry. Just ask him, he knows. But sometimes I believe that if Nelson didn't have bad luck he would have no luck at all. But what you have to love about Nelson is that he embodies the true Rocketeer Spirit. He keeps coming back. I can't count the number of times that Nelson has had an almost perfect flight. I guess that's like being almost pregnant. Nelson proves time and again that the "Weak Link" principle is out there and it will get you. But in retrospect most of the big crashes involve big rockets with big motors. Once again laying credence to the Rocketeer Spirit pushing the envelope. Other memorable flights in the F & F department that come to mind are Kevin Mitchell's. late afternoon altitude attempts. I suppose it's not a challenge to find a rocket in broad daylight. So Kevin elects to attempt recovery and retrieval under the cloak of darkness. Most of the time he gets them back, either by a farmer cutting crops or some poor soul who finds a "missile" beeping in their back yard. But alas, the poor Sand Hawk. The L-190 did it's job, blasting the rocket into the darkening sky. Too good perhaps, as the rocket was never recovered. That in itself wasn't bad enough. Kevin had previously wrecked the Terrier Booster section on an M to K two stage flight this past summer in Whitakers, N.C. . Just to add insult to injury,

yours truly was able to win the spot landing competition. This was done with a 3 point landing of a 30 pound section of the 100 pound M-2500 powered Dummy Money on the hood of Kevin's truck that he just got back from the repair shop two weeks earlier. The truck had struck a deer which did \$3200.00 worth of damage. Estimates on the hood are in the \$500.00 range. So Mrs. Kennedy, how did you enjoy Dallas?

Monster bills, Monster rockets. Dave Bullis never failed to entertain us through out the course of the year. Earlier this past spring with the flight of the N powered J-Turn. At 165 pounds, by far the biggest amateur rocket to leave the ground in the Mid Atlantic region if not the East Coast. A fantastic attempt and flight. Recovery? We don't need no stinking chutes. Once again the winner and still world champion, Gravity. It was quite a sight as the 135 pound burn out weight returned in a flat spin to earth. Three destroyed altimeters, smashed payload section, bent fins, 20 pound nose cone floating off under two 15' military chutes. Only to be found via rented plane a week later over three miles away. You have got to love Dave's enthusiasm. He considered the flight 90% successful and an even heavier J-Turn is being prepped as you read this. This time Dave will bring it back alive. Speaking of alive. How about the final flight of the Monster. Blown forward enclosure to Brian Slojicks Kosdon 2550 casing causing all of the ejection pressure to escape through the nozzle. Dave finally found the opportunity he was looking for to expand on the motor carrying capability of the Monster. Once again Gravity was victorious. The Monster can in ballistic at near terminal velocity and proceeded to empty Dave's wallet. And that was only as a result of the crash. Repair to the Monster will be extensive, but I don't think Dave has fully considered what changing the current 54mm motor mount to a 4" mount will do to his bank account. Remember the fever. I think Dave has it so bad he was given last rights about a year ago.

Dave's Monster isn't the only Monster around. Joe May commissioned Dave to build him one last year. After having many successful flights, in classic Joe May style, Monster #2 was sent back to Bullis Missiles and Space for repair. Joe, who is known for his detailed preparation and

performance was able to find the only 20' wide piece of road for miles from 5000' and lost a couple of fins in the process. Once the repairs to both are done maybe Dave and Joe should drag race them on M-2500s. It could happen!

1999 had its share of smaller, L and down, CATOs and crashes. But the Spirit remains and brings us to places where our wallets should never go. The Spirit lives in our work shops, basements, garages and on the field. The Spirit runs hot in our veins and drives us on against all failures. Though I would like to think of a crash as an opportunity for a new solution. Like, maybe I should attach the chute next time or attach the booster to the payload section or arm the altimeter or actually put some black powder in the ejection container. It all seems so simple when we look back. But we look back as we continue to move forward, hopefully not tripping over our own two feet.

The past season also brought Maryland Tripoli into prominence locally and nationally as we had two articles published in High Power Magazine. The Dummy Money "Dial M For Money" and the launch report from last May when Fred Wallace certified Level 3 and Dave flew the J-Turn. We also made the local television air ways with another first. A live helicopter shot of a amateur High Powered rocket launch. Every so often Channel 13 re-plays the Amazing Grace K-550 launch. What a morning that was, stampede of cows and all. In addition to that, Dave Young had his own promotional spot on WJZ Channel 13 two months previous. Rumor has it that Dave has also done a few cameo appearances joining Marty Bass for the weather. We have also seen our share of the TAP Committee. I think that it is safe to say that Maryland is the new HIGH POWER capital of the East Coast. This is no small feat. Keep in mind though that the Spirit and Fever help, without warm bodies to thrive in, they die. We have to thank our gracious host, Tommy Higgs, who allows all of our warm bodies to spread the Spirit and Fever. If it was not for people like Tommy, High Power in Maryland would be a completely different story. To him, we give our thanks and gratitude. They broke the mold when they made Tommy Higgs. He is sure one in a million. Who else would let 200 strangers on to their land to spend a day flying, crashing rockets and

burning up his land and do it with a smile. Tommy is our biggest and most important supporter. Keep that in mind when ever we are on his land. He is instrumental in contributing to joy we get from this activity or insanity, what ever your particular case may be. Speaking of Fever, one usually associates Fever with the color red. Kathy Gilliland reminds us to be Fashion Conscience as well technically proficient when flying rockets. Please watch mixing the Blues with the florescent Greens.

We opened our doors up more than ever before to some of our fellow disadvantaged Rocketeers from other states. Due to the tragic loss of fields here and in the north and south of us, Tommy Higgs and Maryland Tripoli has taken in our brothers and sisters from other clubs. With the lack of major launches in New Jersey and Virginia, Maryland has pulled up the slack for some of the most severely afflicted. I, for one, am glad we did. I am sure we will be entertained by their projects in the coming season, if this year was any indication. Tim Nist's high flying madness. Bill Rossi and his big scale projects, like the X-15 and the M-2500 powered 12" diameter Bull Pup. Ed Millers creations, like his UFO 98K on a K-650, what else can you call them. And all the other visitors and their projects that we played host to during the year. I believe that it will be projects like these that will inspire us on ward and upward. Not to mention the opportunity to see these cutting edge flights first hand and becoming friends with some of the people that you read about or will read about in the future.

We also had our small share of sadness, with the untimely and tragic loss of our friend and fellow Rocketeer Pat Barber. In the direction that Pat was heading we were sure to be amazed by his exploits in the skies above Higgs Farm. I am sure every week end he is looking down to see what we are up to and maybe will even give a tangled chute a helping hand. I know I sure could use the help. But Pat did leave us with an indelible memory of his Project BS. The guys in the Black Rock desert have nothing on Pat. If that flight was slipped into a Point 39 Productions Video of a Balls launch you would not have known the difference. You never know when your time

is up so launch often and launch big, because you can't take them with you.

1999 was our biggest year ever, till we finish with the year 2000. ESL #29 saw 143 flights on 11-20-99 and 187 on 11-21-99. For a total of 330 rockets flown at a club launch. Not bad for a bunch of amateurs. The weekend saw Lloyd Gold, Doug Habberline, Paul Long, Mike O'Hearn, Kevin Serdula, Richard Stafford, Mike Thompson, and Tyler Bradley all certifying Level 1. Way to go guys. That wallet is starting to get a little itchy watching the other goings on. David Green, Vince Leonardi, Norm Miller, Glenn Frey, Chris Greco, Bill Kilpatrick, Jay Sessler and Jerry O'Sullivan all got their Level Two Certifications. Congratulations to all. Now I know the heat is really getting turned up and the fever is setting in. Because what comes after 2 but 3. Alan Gorecki and Bill Mantell achieved the crowning achievement in any rocketeers career. Level 3. Alan flew his Hawk Mountain fiberglass rocket on an Ellis Mountain M-1000 to accomplish his goal. Bill Mantell did what everyone expected of him. Another picture perfect flight on a Kosdon 2240 in his up-scaled Eclipse. Not only did Alan and Bill fly an M motor for their certification flights, 3 other Ms were flown just for fun. Fred Wallace Flew his Big Wahoo on an M-2400, Bill Rossi flew his 12" Diameter Bull Pup on an M-2500 and Neil McGilvray flew Dummy Money on an M-2500. This launch featured everything from A's to M's and everything in between. Fantastic weather and fantastic people rounded out a great weekend of smoke and fire on the farm.

Our last launch of the year was smaller but equally as fun. Coming as close to Christmas as it did we had a great turnout. The one day launch featured Bonnie Rosenthal and David Sloan certifying for stage 1 of wallet emptying. Level One. Congratulations and welcome to High Power. This is just the beginning of an activity that will test your creative as well as your financial talents. Glenn MacNemar and Fred Schumacher collected the always difficult Level Two endorsements. That means they can empty their respective wallets at twice the rate of a Level One Flyer. The problem is that a Level 3 flyer empties his wallet at three times the rate of a Level Two flyer. Is there no justice in the

world? This day saw some great flying, a few great crashes, Dave and Ed Brun. It also featured 127 flights.

I have no doubt that 2000 will open the rocketry publics eyes even further and firmly establish Maryland and it's members as leaders technically as well as from a safety perspective. Our growth will be a function of doing it right over and over again. As we have muddled through various learning curves, many of our members have achieved a high level of confidence and ability. They will continue to share the experiences with those new to rocketry. "When you can snatch the L-850 from my hand Grasshopper you may go Level Three." The learning never ends and neither does the fun. As Dave Weber says, "We do it cause it's Cool."

You all have a cool and safe Yule. Fly high and recover low.

*Neil McGilvray*

## 1999, The Numbers:

1999 was a big year for Maryland Tripoli. First off, Dave Bullis's N rocket, then our answers to RATS in November. So here is some of the numbers in 1999.

1130 total flights (at least written up on a flight card). 1184 motors used, H the motor of choice with 196 used. 228 total fliers. Certification levels were many, 20 level 1, 18 level 2, 3 level 3's. Richard Hickok is King of BP, with 37 flights, Ivan Barnsley is right behind him with 27 flights. David Weber is the over all King with 42 total flights. And last but not least Fred Wallace spent the most money, ah, I mean burned the most NS last year with 3 M's alone. That's 23% of all the M's burned last year (13). Kits of choice is Scratch with 398. Estes is next with 179, followed by PML with 157. Almost forgot the total NS burned last year 669040ns. Like it means anything, that equals a T and 1½ M motors or 65 M motors.

*Bob Utley*

## Tech Tips:

### Check Those Liners!

Have you ever assembled an Aerotech high power reloadable motor and not been able to fully tighten down the aft closure? Yeah, most of us have had this happen, and if you're like me, you don't feel very comfortable about it depending on how much of a gap is left between the closure and the casing.

At the November 21<sup>st</sup> launch I decided to try a K1100 in my Magnum. This reload goes in the 54/1706 casing. The motor assembly went nominally until the final tightening of the aft closure. It only screwed in about half way, leaving about an 1/8" gap between the closure and the casing. I have previously used two K550 reloads in the same casing and both tightened all the way down with the o-rings compressing the last 1/16" or so just like they should.

I carefully disassembled the motor and rechecked that the delay stack was protruding above the delay liner 1/32"-1/16" as it should. The delay looked fine so I assumed that the phenolic propellant liner was not cut properly and was too long. I visited Ken (Performance Hobbies) and he was kind enough to give me another liner to try. When comparing the new liner to the old, they were exactly the same length.

I reassembled the motor with the same resulting 1/8" gap at the aft end. I asked around and found that two others had had to cut their K550/K1100 liners down to get their motors together properly. Well, not wanting to modify the motor, and against my better judgement, I decided to go ahead and try flying it the way it was, with the gap. Bad decision. My Magnum got about 3 feet up the rod and promptly blew the aft closure. All 4 propellant slugs were ejected out the bottom with only one burning, most likely the top slug where the ignitor was. The rocket continued up about 10-15 feet and landed on its side. Not real pretty.

My Magnum is repairable and I did learn to listen to that little voice in my head that says not to fly when something doesn't seem 100% right. I also decided to try and dig up some data on liner lengths so that I could add that step to my motor inspection process. I posted a message on the

rocketry newsgroup and heard from Bill Rossi, the president of METRA. He said that he had access to an Aerotech liner chart and later emailed me a copy of it. A jpeg of the chart is available at <http://members.aol.com/rcbrustee/atliners.jpg>. I've reproduced the vital information below for those that don't have access to the internet. And by the way, my K1100 liner turned out to be more than an 1/8" too long. So remember, check those liners!

<u>Motor</u>	<u>Liner Length</u>
<b>29mm</b> 29/240 (H220T only)	7-1/16"
29/360	10-25/32"
<b>38mm</b> 38/480	7-1/2"
38/600	9-3/8"
38/720	11-1/4"
38/1080	16-7/8"
<b>54mm</b> 54/852	6-61/64"
54/1280	10-9/32"
54/1706	13-39/64"
54/2560	20-17/64"
<b>75mm</b> 75/2560	11-1/16"
75/3840	16-3/8"
75/5120	21-11/16"
75/6400	27"
<b>98mm</b> 98/2560	6-5/8"
98/5120	12-11/16"
98/7680	18-3/4"
98/10240	24-13/16"
98/15360	36-15/16"

*Randy Brust*

### RAM -AIR CHUTES

Round chutes are o.k. X- shaped chutes are neat but RAM-AIR chutes are even neater. Here starts the saga. I've always been fascinated with skydiving. Those square chutes are a great work of art. How would they work on rockets? The only way to find this out is go to a skydiving facility. There is one by my house and by weeks of observing these canopies and trying to figure how to make one was even

crazier of a thought. I decided to just do it. I bought some F-111 porous ripstop nylon from the owner of the facility and began to draw up plans.

Let's get something straight first. It wasn't easy. I actually had to sit down, do some mathematical computations for the down sizing, what size to make the air cells, how much ripstop to sew, etc... I ended up using two 3x3 yards of fabric. This may seem like a lot but you would have to see the chute to believe it. Well, needless to say, in between changing diapers, doing the parental duties and work, it took me 5 months to complete.

The thing that makes this chute special is that I stitched it all by hand! That's right, needle and thread. Actually the thread was 80 pound test of impregnated nylon string. Now that the chute was done, I had to determine where the strouds would go. Back to the blue prints. Way too many but who cares. Believe it or not, the hardest part was yet to come. The chute was somewhat big and bulky, so in order to fit it in a rocket of at the VERY least 5.54" dia.(preferably 7" or greater), I needed to put the chute in something. A bag of course, no big deal. Ok. When you see a skydiver freefall, what is the first thing you see? Right, the pilot! (drogue to those who are too technical)

I had to research how big the pilot had to be in order to inflate quick and strong enough to pull my chute out of the bag. Back on the internet and telephone. Believe it or not, pilot chutes on human chutes look no bigger than 36" so I really had to improvise. It's kinda hard to determine how fast a rocket is coming down to Earth, so I had to make a careful assumption. My pilot ended up being around 28" with a chord of about 4-5 feet attaching to the bag. I can only hope at this point it works, because think about it ( some may defend this next comment) but when the rocket launches and arcs over what are you technically at the mercy of? Well, yes, the ejection charge but what about recovery? Yes, the pilot chute. If this thing doesn't inflate, your main is stuck in the bag, hence a crashing rocket and a lot of profanity.

Yes, I must admit I am adding an unnecessary factor here but I wanted to see how much I can accomplish with experimentation. I arrive in Maryland on

November 21, 1999. I meet with Ed Miller and a gentleman that I can't remember (had a gray sweatshirt with a Baseball logo on it), anyway two nice rocketeers that I wanted to show my chute too.

Embarrassed, I showed them thinking it may be a laughing session. They liked it and couldn't wait to see it. That made me feel good. To make a long story short, I chose an I435T for my WARLOCK to test this chute. It took me 15 minutes to build the motor, another 5 to prep the rocket and 20 minutes to pack the chute! 5..4..3..2..1.. Whamo!!!! Up it goes, arcs and VOILA, nosecone off, pilot out and inflates, bag opens and out comes the chute. All in what seemed like slow motion! The rocket gently circled down and oh, how pretty it was !

*Guy DeStefano*

## Misc Info:

### **Balls 1:**

The dates for the BALLS launch this year will be September 30 and October 1 with a setup day on Friday Sept 29. The date is a little later to give more time between the Aeropac launch, the Burning Man and BALLS.

BALLS is run under the Tripoli Experimental rules. Anyone planning to fly a Q or larger motor must contact Tripoli prior to the launch. There will be "standard" ground support, with LCO control to 1000'. If you require anything in the way of special launch towers, rails or electrical plan on bringing it yourself.

Mark Clark  
Prefect  
AHPRA  
XRAA

### **Balls 2:**

I'm sure most of you are aware of the rumors concerning LDRS 2000 not hosting an experimental day. These rumors centered around the following: the proposal for LDRS 2000 did not include a day for experimental, experimental flyers represent a small percentage of the total number of LDRS flyers and to give up 25%, or perhaps 33% if one day is rained out, of the flying

time to less than 10% of flyers does not necessarily make sense, and an extra flying day could not be added either before or after LDRS.

The obvious solution was to combine experimental and regular flying on the last day as has been done in the past. However the decision has been made to not combine the two on the last day.

After hearing of the above, several of us started talking about hosting a Small Balls event after LDRS 2000. In particular we thought the Whitakers launch site was ideal because it's "close" to the Orangesburg and "on the way home" for the majority of the flyers attending LDRS 2000. The Whitakers launch site is one of the most active sites on the east coast hosting monthly regular and experimental launches. Having hosted a Small Balls a couple of years ago, Fall WELD in Oct 99 and hosting Spring WELD in April 2000, all of us felt we had the site, accommodations, personal and experience to host a "national" Small Balls.

With the support of Bill Davidson, Dennis Hill, Jim Scarpine and the Whitakers experimental group, I approached Bruce Kelly with the idea of Whitakers hosting Small Balls 2000 in conjunction with and after LDRS 2000. The event would be held at Whitakers site on July 6 and 7 with the 8th being a rain day or an extra day if needed. July 5th would be the travel day from the Orangeburg area to the Whitakers area. Accommodations would be handled by the Holiday Inn at Dortches. This week Bruce gave his approval.

Needless to say time is short and July will be here before we know it. Therefore, I'd like to schedule an organizational kick off meeting to be held at Holiday Inn - Dortches x 141 on Saturday January 22nd at 7:30 pm. With your suggestions, an agenda for the meeting will be developed and published by no later than January 18th.

I'm looking forward to a very successful Spring WELD and Small Balls 2000. If you have any questions or comments, please feel free to contact me.

Ben Russell  
Launch Director for  
Spring WELD 2000, Small Balls 2000

*John Paul Stapp.* Once known as "the fastest man on Earth", Stapp is best known as "the guy on the rocket sled" -- countless photos and movies have circulated over the years of Stapp, strapped into a chair on a track with a rocket on the back, shooting down the track and withstanding forces up to 40 Gs -- 40 times the force of gravity. A doctor in the U.S. Air Force, Stapp took 29 high-speed rides on the rocket sled in the 1950s to test the effects of high acceleration on the human body. The data he gathered is still used to help in the design of safety systems for everything from automobiles to spacecraft cabins. Stapp died in New Mexico November 13, apparently from emphysema and diabetes. He was 89.

*Unknown*

## PERFORMANCE HOBBY

<http://www.performancehobbies.com>

PH is now carrying Missile Works RRC2 and WRC2. New to PH is the complete line of Black Sky Research too.

Almost anything you could need they should have. Phone (202) 723-8257, fax (202) 723-0010.

## NEXT ISSUES:

- Launch reports for Jan & Feb.
- Events for March & April.
- MTR new shuttle spacecraft.

Keep The Pointy End  
up and the Firey  
End down.

D. Bullis

<http://www.mdtripoli.org>  
Copyright 1999, 2000 M.T.R. #68

**"Flight Log November 20 - 21, 1999 ESL #29"**

<b>Flyer</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Motors</b>	<b>Result</b>
Adams William	Estes	Amraam	F52	
Adams William	Custom Rockets	Matra	C6	
Adams William	Scratch	Satellite Interceptor	G80	
Alewine Bill	Scratch	V2	E30	
Alewine Bill	Scratch	Silver Retro	G80	
Alewine Bill	Scratch	Silver Bullet	G80	
Alewine Bill	Scratch	Silver Bullet	G80	
Alewine Bill	Scratch	Silver Retro	G125	
Alewine Bill	Scratch	Silver Bullet	G80	
Alewine Bill	Scratch	Silver Bullet	G80	
Alewine Bill	Scratch	V2	E30	
Alewine Bill	Scratch	Silver Streak	G80	
Anderson Tom	Scratch	Ranger	B4	
Anderson Tom	LOC	Lil Nuke	G55	
Anderson Tom	LOC	Aura	E28	
Anderson Tom	LOC	Onyx	F39	
Ash Mike	Scratch	Standard Arm	F70	
Atkins Ryan	Aerotech	Initiator	F50	
Barnsley Ivan	Scratch	Loud as it Looks	H242	
Barnsley Ivan	Scratch	"Whistler, Jr"	F37	
Barnsley Ivan	Scratch	Let's Color	H128	Good Flight
Barnsley Ivan	Scratch	Leftovers n' Idea	C6	
Barnsley Ivan	Scratch	Whistler	G54	
Barnsley Jeanie	Estes	Space Camp	B6,B6	
Barnsley Jeanie	Rocket Vision	Six Pack	C6	
Barnsley Jeanie	Scratch	Super Stilt Fin	D12	
Barnsley Jeanie	Estes	Eeyore	D12, C6	
Bellerose Brian	Scratch	Patriot	I284	
Bellerose Brian	Scratch	Naked Black Brandt	G80	
Booker Bob	Scratch	?	G64	
Booker Bob	Thoy	Falcon	H123	
Brendan	Aerotech	Initiator	F20	
Bullis Dave	Scratch	Monster	K1100	
Costanza Gene	V.B.	Extreme 24	G55	
Costanza Gene	Atlantic	EV-3	H242	
Craig Jerome	Scratch	CF Wonder	I435	
Crosby David	Scratch	CC63	I211	
Custer Rich	Scratch	New Detroit	F20	
Custer Rich	Scratch	The Red Guy	F24	"built for \$3, with funnel"
Custer Rich	LOC	Bumble	H124	
Custer Rich	Scratch	New Detroit	F20	
Davenport Jeff	JD Cluster	Magnum Twin	K1100,H124	
Frey Glenn	Scratch	L Raiser	J350	*Cert 2*
Gaduch Ken	Estes	Phoenix	E15	
Gaduch Ken	Estes	Shadow	E18	
Gilliand Kathy	Estes	Impulse	D12,D12	
Gold Lloyd	LOC	Legacey	G40	
Gold Lloyd	LOC	LOC IV	H124	*Cert 1*
Gold Lloyd	LOC	Legacey	F25	
Green David	LOC	Bruiser	J275	*Cert 2* Got it
Gorecki Alan	Hawk Mountain	Raptor	I560	
Gorecki Alan	Hawk Mountain		M1000	*Cert 3*
Haberline Doug	NCR	Archer	H124	*Cert 1*
Hackett Steven	Scratch	SA-Archer	G125,F101	
Hackett Steven	Scratch	Maxi Beta	I161	
Hackett Steven	LOC	LOC IV	G80	
Hackett Steven	NCR	Lance Beta	G35	
Hickok Richard	Scratch	G-Tube Rocket	D12	Good Flight
Hickok Richard	Scratch	Kilter	E15	No Go
Hickok Richard	Scratch	Strobe-One	D12	
Hickok Richard	Scratch	Tar-Tar	D12	
Hickok Richard	Estes	Pheonix	D12	
Hickok Richard	Scratch	Alarm	C6	
Hickok Richard	Scratch	Kilter	D12	
Kirkpatrick Bill	PML	Blue Thunder	J350	*Cert 2*
Kyte Jake	LOC	Onyx	F62	
Kyte John	LOC	Aura	F37	

Kyte	John	PML	Phantom	G104	
Lee	Denis	PML	Amraam 2	H128	
Leonardi	Vince	LOC	Warlock	J350	*Cert 2* Got it
Long	Paul	Scratch	Explorer	H124	*Cert 1* Got it
Long	Paul	PML	Explorer	G80	
Luoni	Denis	Scratch	Lit'l Rat	F20	
Luoni	Denis	Scratch	Scroam	D12	
Lussier	Bob	LOC	Forte	F40	
Lussier	Robert	LOC	Viking	G40, G60	
Luster	Rich	Scratch	Blinky	G125	
Mantell	Bill	Scratch	Eclipse	M2240	*Cert 3* Got it!!!!!!
May	Joe	Scratch	Neutrino	1/6A1	say what?
May	Joe	Scratch	ASP	H97	
McGee	Kevin	PML	Eclipse	I211	
McHugh	Mike	PML	Amraam 4	I300	"foldup, motor sep."
McHugh	Mike	PML	Black Brandt	G75	
McHugh	Mike	Estes	Lite Experimental	D12	
McHugh	Mike	Scratch	Devil I	F10	
McNemar	Glenn	PML	Eclipse	I310	
Miller	Ed	Scratch	UFO 98K	K650	
Miller	Ed	Scratch	Monocopter	G12	Outstanding
Miller	Norm	Scratch	?	J275	*Cert 2*
Mitchell	Kevin	Custom Rockets	Sandhawk	K1100,G80	
Oasen	Rick	LOC	Lilac Time	F24	
Oasen	Rick	Aerotech	Gryffindor	G35	Good Flight
Oasen	Rick	V.B.	Silver Fox	I211	
Oasen	Rick	LOC	Norad	F50	
Oasen	Rick	Aerotech	Jeanie the Beanie	F50	
O'Hearn	Mike	PML	Secret Sauce	H123	*Cert 1*
Potter, Jr	Jeff	Custom Rockets	Venture	B4	
Proseus	Ted	Scratch	Arcturus	I230	
Proseus	Ted	Scratch	Fat Man	G40	
Rossi	Bill	Smokin Rockets	Bullpup	M2500	
Rowe	Ed	PML	Endeavour	I284	
Rowe	Ed	Hobby Lab	SR71 Blackbird	E15	
Russell	Ben	Scratch	Yellow Express	K1100	
Russell	Josh	Edmonds	Ecee	A3	Excellent Glider
Russell	Josh	Estes	Skywinder	C6	
Russell	Josh	Scratch	Hawk	D12	
Schumacher	Fred	PML	Sabre	I435	
Schumacher	Josh	PML	Gyrados	H97	
Serdula	Kevin	Scratch	The Speeder	H128	*Cert 1* Got it
Sessler	Jay	PML	Eclipse	J350	*Cert 2*
Sessler	Jesse	LOC	Graduator	G80	
Shope	Don	Scratch	?	D12	
Shope	Don	LOC	Lil Nuke	G35	
Shope	Don	Scratch	none	F39	
Shughrue	Phil	Estes	Hyper X	C6	Lawn Dart
Shughrue	Phil	Estes	Hyper X	C6	
Shughrue	Phil	Estes	Hyper X	C 6	
Shughrue	Phil	Estes	Hyper X	C 6	
Sloan	David	PML	Amraam 2	F20	
Sloan	David	PML	Amraam 2	F20	
Slogick	Brian	Scratch	Rebel W/out a Cause	J850	
Stafford	Richard	PML	Mini Mag/ Fat Boy	H242	*Cert 1*
Stoetzer	David	Scratch	Prelude	L1500	
Terry Cha	Dave Luc	Scratch	Army Sergeant	K550	
Thompson	Mike	PML	Explorer	H123	*Cert 1*
Trancucci	Rom	PML	1/2 Patriot	K550	
Trancucci	Thomas	LOC	Bruiser	J460	
Utley, Jr	Robert	MSH	V2	E15	
VanSavn	Rich	Scratch	Upscaled Graduator	K1100,J350	
Vovou	A & A	Scratch	Ugle Stik	I211	
Wallace	Fred	Scratch	Big Wa-Hoo	M2400	Outstanding
Wallace	Nelson	PML	1/2 Patriot	L850	
Weber	David	Weber Eng.	Kiss my Heiney	G80	Fin Sep.
Weber	David	Weber Eng.	Yellow Jacket	F14	Good Flight
Weber	David	Weber Eng.	I Killed Kenny	E30	"Yep, dead again"
Weber	David	Weber Eng.	Tuber	H97	#102
Wilson	Steve	PML	1/4 Patriot	H180	Good Flight

Wilson Steven	Rocket R&D	Sandhawk	G80	
Winazak Wayde	LOC	Jessa Lyn	G40	Good Flight
Winazak Wayde	LOC	Cool Dude	H123	
Young Dave	Binder	Sentinel	I161	
? ?	Scratch	unknown	L1850	
<b>November 21 Launch Stats.</b>				
Adams William	Scratch	Goblin	H73	
Adams William	Scratch	Photon Disruptor	H242	
Alewine Bill	Scratch	Silver Streak	G125	
Alewine Bill	Scratch	V2	E30	
Alewine Bill	Scratch	Silver Bullet	G125	
Apke Ted	Scratch	Bob done good	J275	
Ash Mike	Scratch	Gemini Titan	H123	
Ash Mike	Scratch	Gemini Titan	D12	
Banz Mike	Scratch	Super Mag	J570	
Berlin Louie	NCR	Archer XL	H180	
Berlin Louie	High Flight	Andria	H124	
Berlin Louie	NCR	1/4 Patriot	H97	
Berlin Louie	High Flight	Plum Crazy	H238	
Berlin Louie	High Flight	Saggetta	H125	
Booker Bob	MSH	"V2 4""	H128	
Booker Bob	LOC	I Roc	I161	
Booker Bob	Scratch	Upscale Rampage	G64	
Bradley Tyler	Scratch	Wac Corporal	H124	*Cert 1* Got it
Bradley Tyler	Scratch	Grotale	J230	*Cert 2* no go sorry
Brun Ed	PML	Flirting with Disater	K550	
Brust Randy	LOC	Magnum	K1100	
Cirej Joe	Estes	Scorpion	C6	
Cirej Pat	Estes	Wizard	A8	
Ciurej Ray	Estes	Astro Cam	C6	
Costanza Gene	Scratch	?	F32	
Costanza Gene	Scratch	?	F20	
Costanza Gene	Scratch	?	F20	
Costanza Gene	Atlantic	EV-1	G64	
Costanza Gene	Atlantic	EV-3	I145	
Crabtree Dustin	Scratch	Big Red	L1100	
Crabtree Dustin	Scratch	X-1	D12	
Crabtree Dustin	Scratch	Golddust	D12	
Craig Jerome	Scratch	CF Wonder	J570	
DavenportJeff	Scratch	Dynamo	I255, F70	
Davidson Bill/Colin	PML	Bull Puppy	G125	
Davidson Bill/Colin	Scratch	Acme	E15	
Deaver Gary	Scratch	Black Pulse	F37	
Deaver Gary	PML	Caypso	G104	
Deaver Gary	PML	Calypso	G125	
Deaver Gary	Scratch	Neptune I	C5, A10	
DeRosa Bob	LOC	Minie Mag	H238	
DeRosa Bob	LOC	Expediter	H180	
DeRosa Bob	LOC	LOC IV	H128	
DeStefanoGuy	Binder	Iris	I284	
DeStefanoGuy	LOC	Warlock	I435	nice chute
DevenportSlogich	Scratch	Dynamo II	I195, F101	
Evans Tom	LOC	Mini Mag/ Fat Boy	I161	
Gilliand Kathy	Scratch	Sun Seeker	K400	
Gorecki Alan	Hawk Mountain	Exp. Test Veh	J350	
Gorocki Alan	Hawk Mountain	Bad Attitude	L600	
Graybush Howard	Thoy	Nighthawk	H128	
Greco Chris	PML	Amraam 3	J350	*Cert 2*
Haberline Doug	NCR	Archer	G104	
Hickok Richard	Apogee	Baby Bomarc	A3	
Hickok Richard	Edmonds	EE-Cee	A3	
Hickok Richard	Estes	Slant-Six	C6	
Hickok Richard	Estes	Truncated Big Bertha	C6	
Hickok Richard	Scratch	Blow Pipe	C6	
Hickok Richard	Estes	Phoenix	E15	
Hickok Richard	Edmonds	Ecee-Thunder	D12	
Hickok Richard	Scratch	Alarm	D12	
Hickok Richard	Scratch	Alarm	D12	
Hickok Richard	Scratch	Seattle Special	B4	
Hickok Richard	Estes	Sidewinder	C6	

Higgs Adam	Quest	Fury	A10	
Hutchinson Steve	PML	Miranda	G80	
Hutchinson Steve	LOC	HiTech-H45	F50	
Hutchinson Steve	NCR	Patriot	G64	
Hutchinson Steve	Scratch	Naram 41	D15	
Hutchinson Steve	Scratch	Big Mosquito	D12	
Kendig Greg	PML	Amraam 4	H125	
Kendig Greg	PML	Amraam 4	H240	
Kendig Greg	Aerotech	Initiator	G40	
Kirkland David	Scratch	Holy Cow	G40	
Kirkland David	LOC	Stovi	F39, D12	
Luoni Denis	Scratch	Litl Rat	F20	
Luoni Denis	Scratch	Happy Pumpkin	G80	
May Joe	LOC	Explorer	G120	
May Joe	Scratch	Plover	H160	
May Joe	LOC	Magnum	J415	
McCluskey Scott	Aerotech	Nike Hercules	E15	
McCluskey Scott	PML	1/4 Patriot	H180	
McGee Kevin	PML	Phantom	G64	
McGee Kevin	Scratch	Moonshine	K550	
McGee Kevin	Scratch	Black Jack	I435	
McGilvray Neil	Hobby Lab	SR71 Pikochu	E15	
McGilvray Neil	Scratch	Dummy Money	M2500	Bang...
McHugh Kevin	Estes	Smitch	C6	
McHugh Kevin	Scratch	Bits N Pieces	C6	
McHugh Kevin	Estes	Smitch	D12, C6	
McHugh Mike	Estes	Light Exper	D12	
Miller Ed	Thoy	Falcon	J800	
Miller Ed	Scratch	Tekyon	H180	
Miller Ed	Scratch	Strobe 7	I435	
Miller Norm	Scratch	Sudden Rush	I211	
Miller Norm	Scratch	?	I357	
Mitchell Kevin	Custom Rockets	Sandhawk	K550	
Mulder Kenneth	Scratch	Jersey Skeeter	K550, G80	
Neifert Steve	Estes	Phoenix	H180	
Nerrey Stephen	Estes	X-Ray	A3	
Oasen Rick	Aerotech	Gryffindor	G35	
Oasen Rick	V.B.	Yellow Chick	F22	
Oasen Rick	Aerotech	Jeannie The Beanie	F25	
Oasen Rick	Aerotech	Red Arrow	F40	
Oasen Rick	Estes	R2D2	A10	
O'Sullivan Jerry	Thoy	Phoenix	I211	
O'Sullivan Jerry	Public Enemy	Honest John	I284	
O'Sullivan Jerry	Scratch	Murphy's law	K185	*Cert 2*
Poore William	Aerotech	IQSY Tomahawk	F50	
Potter Ken	PML	Callisto	H124	
Potter Jr. Jeff	Estes	Amraam	B6	
Potter Jr. Jeff	Estes	Ariel	I357	
Quire Kevin	PML	D-Region Tomahawk	I161	
Rafferty Jr Roger	Estes	Athena	B6	
Rafferty Jr Roger	Quest	UFO	C6	
Rafferty Jr Roser	Estes	Dagger	B6	
Raumberger Scott	Smokin Rockets	Nike Smoke	L1130	
Rechter David	Impulse Aero	Check Six	D12	
Rechter David	Impulse Aero	Check Six	D12	
Rechter David	LOC	Legacy	F72	
Rechter Gary	LOC	Lil Nuke	G33	
Rowe Ed	Hobby Lab	SR71 Blackbird	E15	
Rowe Ed	Cluster R	Standard Arm	K550, G80	
Rumbley Wally	Scratch	?	D12	
Rumbley Wally	Scratch	Starship	C6	
Rumbley Wally	Estes	Prowler	B6, C6	
Rumbley Wally	Estes	Big Bertha	D12	
Rumbley Wally	Scratch	?	D12, C6	
Sauer Dennis	Aerotech	Ragal	G40	
Sauer Dennis	PML	Small Endeavour	G75	
Schumacher	Fred	PML Sabre	I435	
Schumacher	Fred	PML Sabre	I435	
Schworer Bill/Colin	PML	Sudden Rush	I161	
Sechrist George	LOC	Primed to Go	J275	

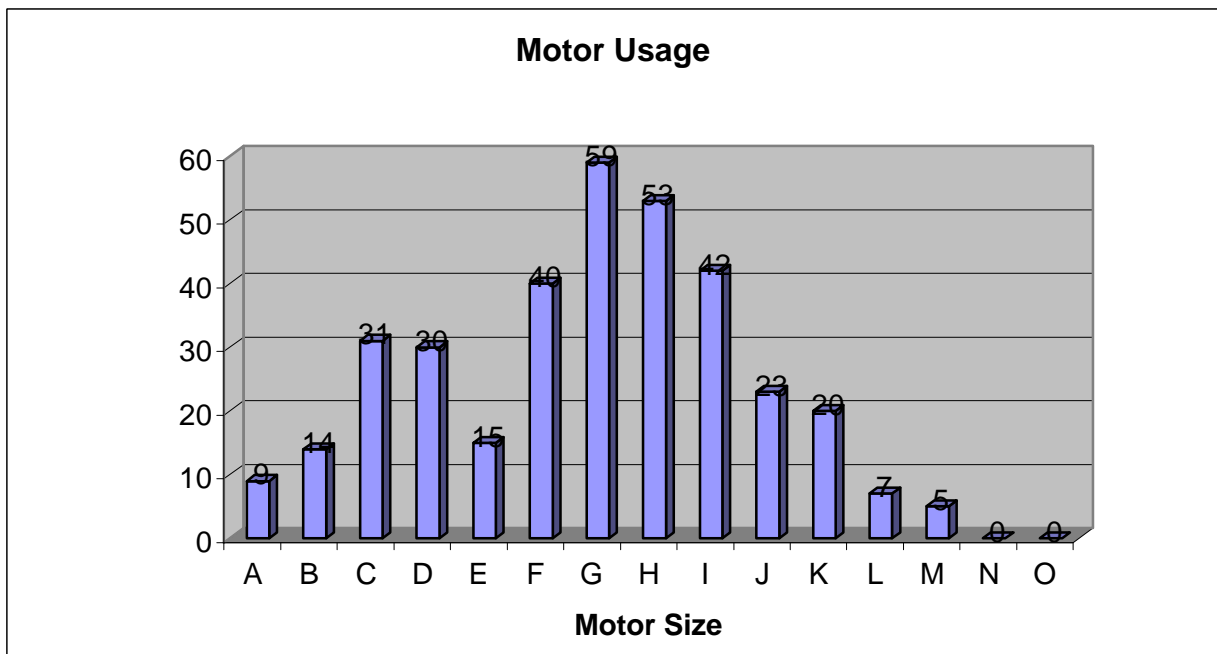
Senn Nathan	Estes	Firebird	D7	
Sessler Jay	LOC	Bruiser EXP	K550, I211	
Sessler Jesse	LOC	Graduator	F50	
Sherman Courtney	PML	Amraam	H240	
Sherman Justin	PML	Amraam	H240	
Sherman Justin	Estes	Skydive	C6, B6	
Sherman Justin	Estes	Skywinder	B6	
Sherman Justin	Estes	R2D2	B6	
Sherman Justin	Estes	Skydive	C6	
Shope Don	Aerotech	Mustang	G35	
Shope Don	LOC	Vulcane	H120	
Shope Don	Scratch	Ron Jons	I300	
Super Rob	Scratch	Navigator 5	H97	
Terry Cha Dave Luc	PML	Amraam 2	H128	
Terry Cha Dave Luc	Thoy	Phoenix	H128	
Thomas Keith	Quest	Red Wings	B6	
Thomas Keith	Quest	Red Wings	C6	
Thomas Phillip	Quest	Thunder 7	B6	
Thomas Phillip	?	Crazy Rocketman	C6	
Thomas Phillip	Quest	Thunder 7	C6	
Trancucci Anthony	PML	1/4 Amraam	I284	
Trancucci Tom	PML	"6" Patriot	J415	
Utley, Jr Robert	MSH	V2	D12	
VanSaun Rich	Scratch	Upscaled Aura	H128	
VanSaun Rich	Scratch	Stargazer	J415	
VanSaun Rich	Scratch	Min Star Gazzoer	G64	
VanSaun Rich	Scratch	Scud Buster	H123	
VanSaun Rich	Scratch	4 Ed	G64	
Vovou Andy	Smokin Rockets	Nike-Tomahawk	K560/I284	
Wallace Fred	Scratch	Long Bow	H220	
Wallace Fred	Scratch	Sky-Rocket	K500	
Wallace Nelson	Aerotech	Mirage	I 420	
Walz Larry	Scratch	Blue Max	C6	
Weber David	Rocket R&D	Skydraider	K550	Outstanding
Weber David	LOC	Minnie Magg	I357	
Weber David	MSH	V2	H220	
Weber David	?	Archer	I200, G80	
Wilson Steve	PML	Eclipse	J275	
Wilson Steve	PML	Bull Puppy	H123	
Wilson Steven	LOC	Aura	G40	
Winazak Wayde	PML	Pteradactyl Jr	I161	
Winazak Wayde	Scratch	Silver Lining	F50	
Winazak Wayde	PML	Air Wave	H242	
Winazak Wayde	LOC	Jessa Lyn	G40	
Zupnyk Larry	Scratch	Red Flame	J275	

A	9	22.5
B	14	70
C	31	310
D	30	600
E	15	600
F	40	3200
G	59	9440
H	53	16960
I	42	26880
J	23	29440
K	20	51200
L	7	35840
M	5	51200
N	0	0
O	0	0

348 TOTAL MOTORS 225762.5 NEWTON/SECONDS

Atlantic	3		
Aerotech	13		
Apogee	1		
Binder	2		
Cluster R	1		
Custom Rockets	4		
Dynacom	0		
Edmonds	3		
Estes	38		
Hawk Mountain	4		
High Flight Tech	3		
Hobby Lab	3		
Impulse Aero	2		
JD Cluster	1		
LOC	42	143	Flights on 11/20
Launch Pad	0	187	Flights on 11/21
MSH	4	330	Total Flights
NCR	6		
Neubauer	0		
PML	47		
Pratt Hobbies	2		
Public Enemy	1		
Quest	6		
Rocketman	0		
Rocket R&D	2		
Rogue Aero	0		
Rocket Vision	1		
TCB	0		
Thoy	5		
True Modeler	0		
Scratch	124		
Smokin Rockets	3		
V.B.	3		
Unknown	2		
US Rockets	0		
Weber Eng.	4		

330 TOTAL ROCKETS



**"Flight Log December 12, 1999 ESL #30"**

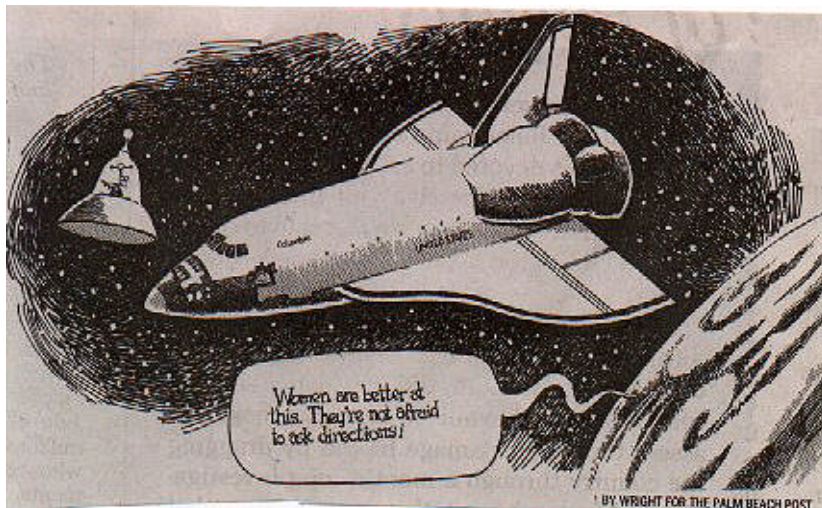
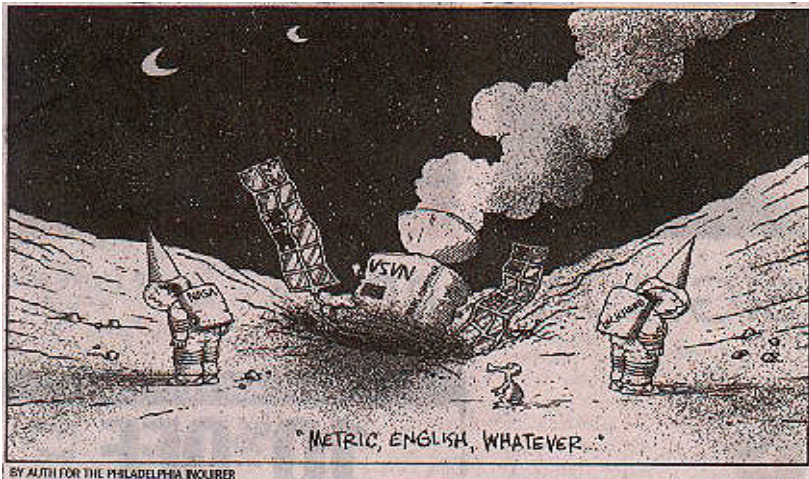
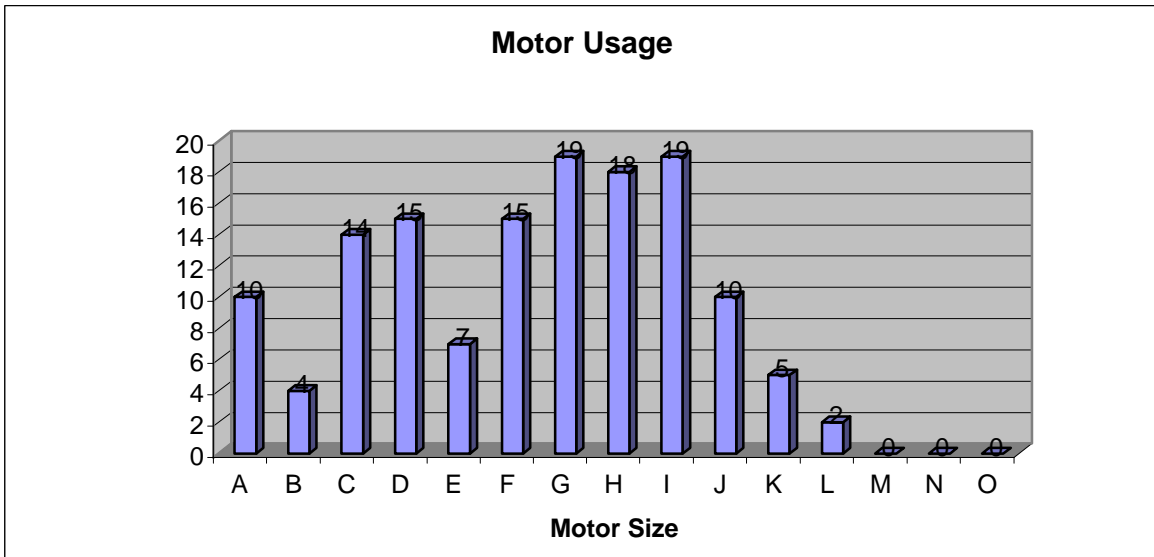
<b>Flyer</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Motors</b>	<b>Result</b>
Adams Williams	Scratch	Pegasus	C6	
Adams Williams	Scratch	EAC Viper	H123	good flight
Adams Williams	Scratch	Flying Tiger	F20	good
AlexanderScott	Custom Rockets	Sam X	B6, B6	
AlexanderScott	Estes	Alpha IV	A8	good flight
Anderson Tom	Aerotech	Warthog	F23	
Anderson Tom	LOC	Onyx	E15	
Anderson Tom	LOC	Onyx	E15	beautiful shot
Anderson Tom	Estes	Skinni-Mini	A10,A3	
Anderson Tom	Estes	Skinni-Mini	A10,A3	
Anderson Tom	Aerotech	Warthog	F20	good
Banz Mike	PML	Tethys	I435	
Banz Mike	LOC	Caliber	H180	good flight
Banz Mike	Scratch	Redmag	J800, I357	
Bellerose Brian	Estes	Python	F24	
Bellerose Brian	Scratch	Pudge	I 161	
Bellerose Brian	Scratch	1/4 Patriot	J350	beautiful shot
Bellerose Brian	Aerotech	Initiator	G35	good
Bellerose Brian	LOC	Stars & Stripes 4 Eve	G80	good
Bellerose Brian	Estes	Python	E15	good
Booker Bob	PMI	1/4 Patriot	H180	
Booker Bob	Scratch	3/4 WaHoo	G40	
Booker Bob	Scratch	Onyx	F22	good
Bradley Tyler	Estes	Black Brant	D12	
Bradley Tyler	Scratch	Copperhead	D12	
Bradley Tyler	Estes	Seahawk	E30	
Bradley Tyler	Scratch	Thunderstore	G40	
Bradley Tyler	Estes	Longshot	D12, C6	beautiful 2 stage
Bradley Tyler	Scratch	Wac Corporal	G25	
Bradley Tyler	Scratch	Tow Missile	J230	
Brun Ed	PML	Flirting with Disaster	L630	Nice flight
Crosby Dave	Scratch	CC63	I211	
Crosby Dave	Scratch	CC63	H242	
Davidson Bill	Scratch	Honest John	I284	good
Deaver Gary	Estes	Python	D12	
Deaver Gary	Scratch	Calypso	G120	
Deaver Gary	Scratch		A10,C5	
Deaver Gary	Scratch	Black Pulse	F37	
DeStefanoGuy	PML	Graduator	H180	
DeStefanoGuy	LOC	I-Roc	I161	
DeStefanoGuy	Scratch	Ray of Light	I435	good
Dwyer Roger	LOC	Bruiser EXP	J800, I357	Beautiful Flight
Gilliand Kathy	Estes	Impulse	D12	
Gilliand Kathy	Binder	2 the Stars	I300	
Gold Lloyd	LOC	IV	H125	
Gold Lloyd	LOC	IV	H124	*Cert 1* Got it
Gray Augie	PML	Bull Pup	G75	
Hickok Richard	Scratch	Red Ball Express	C6	Nice rocket
Hickok Richard	Scratch	Fur-lined cold weathe	C6	
Hickok Richard	Scratch	Turd Ferguson	D12	
Hickok Richard	Estes	Bull Pup	C6	
Hickok Richard	Scratch	TarTar	D12	
Hickok Richard	Scratch	Fast Burnin Menoran	C6	
Hickok Richard	Scratch	Red Ball Express	C6	
HutchinsonBryce	Scratch	N-41	D15	
HutchinsonSteve	LOC	Hi Tech H45	H123	
Kirkpatrick Bill	PML	Blue Streak	G80	
Kirkpatrick Bill	Aerotech	Hot Stuff	G80	
Kirkpatrick Sean	Aerotech	Hot Stuff	F20	
Kirkpatrick Sean	Estes	Slime	E15	good
Leonardi Vince	Estes	Snitch	D21	
Leonardi Vince	Aerotech	Initiator	F23	
MacNemarGlenn	Scratch	Midnight Mistress	J340	*Cert 2* got it
MacNemarGlenn	PML	Eclipse	J280	
Mantell Bill	PML	Eclipse	K350	
May Joe	PML	Smokin Plover	`I145	
May Joe	LOC	Magnum	J180,H238	

May	Joe	LOC	Minie Magg	H240	
May	Joe	LOC	Bruiser	J735	
May	Joe	?	Neutrino	A1	
May	Joe	Estes	Disney's Moondog	A10	
McGilvray	Neil	Scratch	Amazing Grace	K550	"Good flight, uh?"
McGilvray	Neil	Scratch	Utter Madness	L850,J350	Moo!
McHugh	Kevin	Scratch	Red Head	B6	
McHugh	Kevin	?	Experimental I	D12	
McHugh	Mike	PML	Black Brant	G75	
Miller	Ed	Scratch	Hershey Kiss	G64	COOL
Miller	Ed	Scratch	Sledgehammer	I435, F101	good flight
Polansky	Mark	LOC	Caliber ISP	I211	
Polansky	Mark	PML	Nike Hercules	I211	
Potter	Jeff	NCR	Eliminator	G38	Beautiful launch
Proseus	Ted	LOC	Orange Crush	H238	
Proseus	Ted	V.B.	Javelin	G64	
Proseus	Ted	LOC	Orange Crush	G40	good flight
Proseus	Ted	LOC	Orange Crush	F40	
Proseus	Ted	LOC	Orange Crush	E30	
Rechter	David	Impulse Aero	Check Six	D12	
Rechter	Gary	LOC	Golden Eagle	G64	
Rosenthal	Bonnie	NCR	Mellenium II	H124	*Cert 1* Got it
Rosenthal	Stephen	Scratch	Milleniam I	C6	good flight
Rosenthal	Stephen	Scratch	Nmellenium I	D24	
Rumbley	Kenny	?	Iron Man	C6	
Rumbley	Kenny	Scratch	????	D12, C6	
Rumbley	Kenny	Estes	Prowler	B6, C6	
Rumbley	Larry	Aerotech	Tomahawk	H220	
Russo	Damian & Tom	PML	Fighter	H330	Beautiful launch
Russo	Damian & Tom	LOC	Shockwave	K700	good
Scechrist	George	Scratch	Candy Cane	G38	
Schumacher	Fred	Scratch	Mew Two	I300	
Schumacher	Fred	?	Sabre	K1100	*Cert 2* got it
Sessler	Jay	LOC	Brusier	K700, I211	
Sessler	Jay	PML	Eclipse	J415	
Shope	Don	Scratch	Ron Jon	I300	
Shope	Don	Scratch	Mellenium III	H124	Good launch
Shope	Don	LOC	Legacy	G80	
Shope	Don	Scratch	Blue	F39	good
Sloan	David	PML	Endeavour	I220	*Cert 1* Got it
Slogick	Bryan	Scratch	Vulcanite H76	G160	
Super	Rob	?	Goddard 3	G125	
Super	Rob	Scratch	Navigator 5	H180	
Super	Rob	?	Goddard 2B3	F52	
Tiger	George	LOC	Vulcanite	H238	good flight
Utley	Bob	Scratch	Delta 2	I211	
Villwacy	Jacob	Estes	Python	D12	
Villwacy	Jacob	Estes	Python	E15	
Wallace	Fred	Scratch	Double Trouble	I211	
Wallace	Nelson	Aerotech		F20	good
Waters	Mike	LOC	Lil'Nike	F50	beautiful shot
Wilson	Jason	Estes	Alpa	D12	
Wilson	Jason	Estes	Fat Boy	C6	Good
Wilson	Jason	Aerotech	Barracuda	F25	
Wilson	Jason	Estes	Mongoose	C6,C6,B6	
Wilson	Jason	Estes	Viking	A8	good
Wilson	Jason	Centuri	Laserlance	A8	good
Wilson	Jason	Estes	Alpha	A8	good
Wilson	Jason	Estes	Big Bertha	A8	good
Wright	Cody	PML	Rocket Dude	H128	

A	10	25
B	4	20
C	14	140
D	15	300
E	7	280
F	15	1200
G	19	3040
H	18	5760
I	19	12160
J	10	12800
K	5	12800
L	2	10240
M	0	0
N	0	0
O	0	0

138 TOTAL MOTORS 58765 NEWTON/SECONDS

Atlantic	0		
Aerotech	9		
Apogee	0		
Binder	1		
Centuri	1		
Cluster R	0		
Custom Rockets	1		
Dynacom	0		
Edmonds	0		
Estes	23		
Hawk Mountain	0		
High Flight Tech	0		
Hobby Lab	0		
Impulse Aero	1		
JD Cluster	0		
LOC	23		
Launch Pad	0		
MSH	0	127	Total Flights
NCR	2		
Neubauer	0		
PML	15		
Pratt Hobbies	0		
Public Enemy	0		
Quest	0		
Rocketman	0		
Rocket R&D	0		
Rogue Aero	0		
Rocket Vision	0		
TCB	0		
Thoy	0		
True Modeler	0		
Scratch	44		
Smokin Rockets	0		
V.B.	1		
Unknown	6		
US Rockets	0		
Weber Eng.	0		
	127	TOTAL ROCKETS	



# January 2000

## Rocket Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																				
						1																																																																																				
2	3	4	5	6	7	8																																																																																				
9	10	11	12	13	14	15																																																																																				
16	17	18	19	20	21	22																																																																																				
						Whitakers Lau. Delaware Exp.																																																																																				
23	24	25	26	27	28	29																																																																																				
Whitakers Exp.						Maryland Trip.																																																																																				
30	31																																																																																									
Maryland Trip.		<table border="1"> <caption>December 99</caption> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td></tr> <tr><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td></tr> <tr><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td></td></tr> </table>			S	M	T	W	T	F	S			1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		<table border="1"> <caption>February 0</caption> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> <tr><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td></tr> <tr><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td></tr> <tr><td>27</td><td>28</td><td>29</td><td></td><td></td><td></td><td></td></tr> </table>		S	M	T	W	T	F	S			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29				
S	M	T	W	T	F	S																																																																																				
		1	2	3	4																																																																																					
5	6	7	8	9	10	11																																																																																				
12	13	14	15	16	17	18																																																																																				
19	20	21	22	23	24	25																																																																																				
26	27	28	29	30	31																																																																																					
S	M	T	W	T	F	S																																																																																				
		1	2	3	4	5																																																																																				
6	7	8	9	10	11	12																																																																																				
13	14	15	16	17	18	19																																																																																				
20	21	22	23	24	25	26																																																																																				
27	28	29																																																																																								

# February 2000

## Rocket Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
		1	2	3	4	5		
		6	7	8	9	10	11	12
		13	14	15	16	17	18	19
		20	21	22	23	24	25	26
		27	28	29				

**Whitakers Exp.**

**Maryland Lau.**

January

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

March

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

**Delaware Lau.**

**Whitakers Lau.**

**Maryland Lau.**